

ABSTRACT

The contact imaging system allows the contact area of an object impressed upon the surface of the contact imaging system to emit light in a pattern corresponding to the contact area making it possible to render an image of the contact area. The contact imaging system has a luminescence layer on top of a transparent electrode. When the object to be imaged contacts the luminescence layer and is held at ground potential relative to the transparent electrode, an electric field is created in the luminescence layer in a pattern corresponding to the contact pattern. The electric field causes the luminescence layer to emit a light image of the contact pattern. The luminescence layer and the transparent electrode are adjacent to a light sensing layer. The light sensing layer receives the light generated at the luminescence layer, and converts that light into a corresponding electric signal. The light sensing element or layer can consist of a PN junction diode having a solar cell structure, a photo transistor, a camera, a scanner, a position sensitive detector, a charge couple device or a CMOS sensor. The contact imaging system can also include a stray light shield which may include a dark pigment to block stray light, and may also include a water repellent and/or abrasive resistant shield layer on top of the luminescence layer.